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Climate Change Sensitization in Pakistan's Public and Private TV News: A Case Study of Floods 2022

Abid Ali Butt
Assistant Professor (Department of Media Studies)
Bahria University, Islamabad, Pakistan.
Email: abidali.buic@bahria.edu.pk

Yasmeen Ali
MS Scholar (Department of Media Studies)
Bahria University, Islamabad, Pakistan.
Email: yasmeen08khan@gmail.com

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Abstract

This paper analyses the portrayal of climate change by Pakistani television news during the 2022 floods a major climate-related catastrophe in the country. A quantitative content analysis of 9 p.m. prime time news shows of three major channels i.e., PTV (public), GEO and ARY (private) has been conducted from June to September 2022 under the postulates of Framing Theory. Items relating to flooding were coded in the coding sheet if their main frame, tone and source explicitly referred to climate change. PTV concentrated on relief and official response, often taking a positive evaluative stance on government actions, and devoted a smaller share of its flood coverage to climate change (9 percent). In contrast, GEO and ARY placed more emphasis on governance and accountability, cited scientific and non-governmental sources more frequently, and adopted climate discourse more comprehensively (22 percent and 18 percent, respectively). However, chi-square tests showed that cross-channel differences in frames and tone were not statistically significant; therefore, the findings are interpreted as descriptive differences in emphasis rather than confirmed statistical differences between channels. The study contributes to climate communication scholarship by showing that Pakistani television coverage of the 2022 floods

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remained limited in its explicit climate-change representation and relied heavily on episodic disaster and relief frames. With implications for enhancing climate risk communication in Pakistan's extremely vulnerable context, the findings demonstrate how ownership contexts may shape media narratives of climate disasters without establishing statistically significant channel-level differences.

Keywords: Climate Change, News Media Coverage, Sensitization, Floods, and Media Framing.

1. Introduction

Pakistan, which is frequently listed as one of the world's most climate-vulnerable countries (Ali & Raza, 2023; Eckstein et al., 2023), faces one of its most pressing challenges: climate change. As a clear reminder of how climate change exacerbates pre-existing vulnerabilities in governance, infrastructure, and livelihoods, the 2022 floods affected over 33 million people, displaced millions, and caused damages exceeding USD 30 billion (World Bank, 2023; Haque & Khan, 2024). The public's perception and reaction to such crises are greatly influenced by the media. With its extensive audience and ability to set agendas, television news continues to play a crucial role in how Pakistanis understand the causes, responsibilities, and solutions of disasters (Yusuf, 2024; Schmidt et al., 2023).

Pakistani disaster coverage, however, has frequently come under fire for ignoring long-term climate attribution, accountability, and adaptation discussions in favor of short-term spectacle and humanitarian suffering (Ali & Raza, 2023; Smith, 2025). This disparity is especially significant since broadcasters' framing decisions affect how viewers define the issue, place blame, assess organizations, and envision solutions (Entman, 1993; Schäfer & Painter, 2021). Thus, assessing the larger communicative context in which climate policies and public awareness develop requires an understanding of how Pakistan's public versus private broadcasters' frame climate change during disasters (Yusuf, 2024).

Furthermore, even though more people are consuming digital media, television is still the most reliable and accessible news source in Pakistan, especially in underserved and rural areas with low internet and literacy rates.

But this dynamic means climate issues remain under-represented in broadcast coverage. A systematic review of the literature by Asif, Jamil, and Ahmad (2024) found that the Pakistani media generally do not sufficiently report on climate change. This is often because of editorial preferences, lack of infrastructure for environmental journalism and low viewership (Asif et al., 2024). Their findings highlight the need to investigate whether public and private broadcasters use different coverage strategies and whether flagship TV bulletins, because of their wide reach and powerful framing, offer sufficient coverage of long-term climate narratives.

The floods in 2022 revealed the systemic vulnerabilities of Pakistan's healthcare system and triggered serious public health emergencies. Governance and logistics shortcomings impeded disaster response, health systems were overwhelmed, and waterborne diseases increased (Abdullah et al., 2024). Zaidi and Memon (2023) also revealed the millions of people being forced towards poverty and malnutrition due to cascading post-flood health shocks, such as outbreaks of diseases, nutritional deficiencies and lack of access to needed care. These observations showcase how media's narrative frames that focus more on structural issues than isolated suffering can influence public opinion, policy discussions, and resilience tactics in the long run.

This study is a comparative analysis of the discourse on climate change during the floods of 2022 between two private channels GEO and ARY and one public channel PTV. It investigates whether ownership structures affect the volume and framing of climate discourse and whether coverage increases public awareness of the structural factors that contribute to disaster risk by methodically examining prime-time bulletins of top tier news channels of Pakistan.

2. Literature Review

2.1 Climate Change and Media Framing

According to framing theory, public perception and policy discourse are shaped by the way the media characterize issues, attribute causes, and offer solutions (Entman, 1993). Scholars have recognized recurrent frames in the context of climate change, including governance, economic costs, scientific attribution, disaster impact, and adaptation (Nisbet, 2009; Schäfer & O'Neill,

2017). Depending on the framing used, audiences may consider climate change a humanitarian crisis, a scientific certainty or a question of responsibility (whether it lies with government, industry or society). As studies indicate, humanitarian disaster framing is often the most common in television news, with spectacle and immediacy overriding complex long-term and structural causes (Smith, 2025).

2.2 Disaster Coverage in the Global South

Crucial is the role of the media in bridging local experiences to global climate discourse-especially for developing nations which are most vulnerable to climate disaster. A common characteristic of South Asian TV coverage is that while narratives and imagery of disaster impacts, such as loss of life and rescue efforts, are widely disseminated, the root structural causes such as international climate justice and the shortcomings of governance systems remain largely unreported (Yusuf, 2024). This focus has the danger of creating a minimal awareness and low public pressure to policymakers for policy and actions for adaptation.

2.3 Ownership Models and Media Narratives

In the perspective of media political economy, the nature of media ownership impacts the framing. Public media more closely follow the state position of attributing causes to science and officials' responses and actions on relief, while private media are more prone to critically frame climate discourse focusing on the responsibility and governance deficit (McNair, 2018). As several comparative studies showed, the effect of private media's increase in diversity of climate discourse could lead to overestimation of crisis to attract audience (Schmidt et al., 2023).

2.4 Climate Communication in Pakistan

However, Pakistan, despite being an exceptionally vulnerable country, has not received adequate research attention within the climate communication scholarship. Studies have suggested that the climate change coverage of Pakistani media is erratic, often peaking in the times of natural disasters and then tapering off (Ali & Raza, 2023). Studies conducted on both 2010 and 2022 floods report an overwhelming concentration of relief-driven

communication without adequate attention to climate policy and adaptation measures. There is still a lack of research on coverage in Urdu and regional languages, which are widely accessible in rural areas (Yusuf, 2024).

2.5 Research Gap

As per the existing dominant literature, very little is known about how Pakistani television news creates climate narratives during disasters, even though international literature outlines how climate change is framed in Western and international contexts. Furthermore, there hasn't been a systematic investigation into the relative effects of ownership models, public versus private broadcasters. By examining how three prominent Pakistani TV channels presented climate change during the 2022 floods, this study fills these gaps by examining whether ownership affects tone and framing and what that means for raising awareness of climate change.

The theoretical contribution of this study lies in applying framing theory to both visible frames and absent or weakly represented frames in Pakistani flood coverage. Framing, rather than solely being a concern about powerful categories, also includes the marginalization of frames about climate attribution, adaptation and themes as a key marker of weak climate sensitization. With this consideration, we can also understand how episodic frames on disaster and relief may limit public knowledge about climate change by remaining on suffering and response.

3. Research Objectives

The objectives of this study are as follows:

i. To assess the extent and scope of flood coverage related to climate change on PTV, GEO, and ARY from June to September 2022.
ii. To determine which frames are most frequently used to tell stories about flooding and climate change.
iii. To examine the tone and framing of two private and 1 public channels.
iv. To determine if the differences that have been noticed are statistically significant.

4. Research Questions

RQ1: How much climate related flood coverage did each channel air from June to September 2022 relative to its total flood coverage?

RQ2: Which major frames dominated the coverage across and within channels?

RQ3: Is there a difference in framing of Climate related coverage in major Public and Privately owned channels in Pakistan?

RQ4: What is the relationship between frame choice and channel and story tone?

5. Theoretical Framework

Framing theory, which emphasizes how the selection and emphasis of particular aspects of reality shape public perception and response, serves as the foundation for this study. Entman (1993) asserts that frames identify issues, identify their root causes, render moral assessments, and offer solutions. Media frames affect whether audiences perceive climate disasters as natural disasters, governance failures, or the result of global warming.

As identified in previous literature, disaster coverage tends to revert to the “humanitarian” and “episodic” frames in most contexts. This means the focus would shift to humanitarian aid, and the acute symptoms and events related to disasters (Nisbet, 2009; Schfer & O'Neill, 2017). With its policy and systemic features overlooked, such framing tends to depoliticize the problem of climate change although empathy can be stirred among the audience. Meanwhile, attribution and responsibility frames will highlight the global obligations, the root causes and the needs for adaptation in the long run.

In the context of hybrid media in Pakistan, while the private media outlets may have relatively higher degree of autonomy, they are also market-driven, and the state-owned PTV, for instance, has a tendency to reflect state discourse (McNair, 2018; Yusuf, 2024). Based on the above studies, this research examines whether the model of ownership has an impact on framing of climate change-induced flood and how climate risk perception is influenced.

Therefore, framing theory has been utilized in this study not only to identify if media chose particular frames over others but also whether or not they converted a significant climate catastrophe into continuing climate communication. The division between episode frames, like impacts of disaster and aid given, and thematic frames like causes and responsibilities and adaptation mechanisms, are crucial in this argument as they help to draw out if floods were communicated as just a humanitarian problem and not a climate-risk issue.

6. Method

6.1 Research Design

This study has adopted quantitative content analysis methodology using prime-time television news bulletins. Each individual news item in the 9pm bulletin is treated as a unit of analysis. An 'item' is considered to be a news item or segment introduced exclusively by the bulletin anchor, which features visual representation.

6.2 Sampling Frame

The study focused on three news channels, namely PTV News (public), GEO News, and ARY News (private). For each channel, the flagship 9 pm bulletin was selected as the primary program of analysis, covering the period from June 1 to September 30, 2022.

6.2.1 Inclusion criteria

This study included the news items that covered the 2022 floods or their impacts and explicitly mentioned climate change, global warming, greenhouse gases, attribution to climate change, or adaptation and mitigation. Items solely about politics or unrelated events were excluded from the data unless they directly linked floods to climate change.

6.3 Codebook

Every news item was examined from a number of angles for the coding scheme. Disaster Impact and Human Toll, Attribution and Science, Governance and Accountability, Response and Relief, Solutions and Adaptation, Economy and Infrastructure, or Human Interest and Community Resilience were the categories from which the main frame was selected. Coverage's valence or tone was rated as neutral, negative, or positive. Government representatives, scientists or experts, NGOs/ INGOs, local citizens, foreign organizations, the corporate sector, or none at all were among the sources mentioned in the news stories.

To ascertain whether the item included field reporting, studio-only presentation, maps or data graphics, or flood visuals, visual cues were analyzed. Lastly, three categories were used to record item length: 30 seconds or less, 31 to 90 seconds, and 91 seconds or more.

6.3.1 Coding Procedure

A sampling list of bulletins was compiled from archives available on official YouTube channels of the networks. 2 Coders were trained on a 15% pilot subsample to refine frame definitions. Ambiguities and inconsistencies were resolved before final coding. At least 20% of the sample was double-coded to assess reliability.

6.4 Reliability

Intercoder reliability was calculated using Cohen’s kappa. Agreement exceeded conventional thresholds ($\kappa \geq 0.70$) for frames ($\kappa = 0.78$), tone ($\kappa = 0.82$), and sources ($\kappa = 0.74$) passing the acceptable thresholds for reliability.

6.5 Statistical Analysis

The analysis was conducted in three phases. The counts and percentages of climate-linked items by channel, month, and frame were first reported using descriptive statistics. Second, chi-square tests were used to compare the

independence of tone and frame distributions across channels; effect sizes were indicated by Cramer's V. To avoid over-interpreting percentages, descriptive differences were not treated as evidence of channel effects unless supported by inferential tests. Where chi-square results were not statistically significant, the findings were interpreted as tendencies, patterns, or differences in emphasis rather than statistically established differences between channels.

6.6 Ethical Statement

All materials were publicly broadcast and were taken from official network channels. No human subjects or officials were involved in the data collection process.

7. Findings & Discussion

The three channels' coverage of flood stories related to climate change showed descriptive variation. Only 11 (9.2%) of the 120 flood-related items that PTV broadcast during the study period specifically connected the floods to climate change, as Table 4.1 illustrates. With 30 of its 136 flood items (22.1%) being climate-linked, GEO, on the other hand, paid more attention to climate change. Between the two, ARY mentioned climate change in 23 out of 128 flood items (18.0%). These results suggest that, descriptively, the public broadcaster (PTV) was less likely than the private broadcasters (GEO and ARY) to place the floods in the context of climate change.

Table 7.1

Distribution of Climate-Linked Flood Coverage by Channel

Channel	Total Flood Items	Climate-Linked Items	Percentage (%)
PTV	120	11	9.2
GEO	136	30	22.1
ARY	128	23	18.0

Note: Percentages are calculated relative to each channel's total flood coverage.

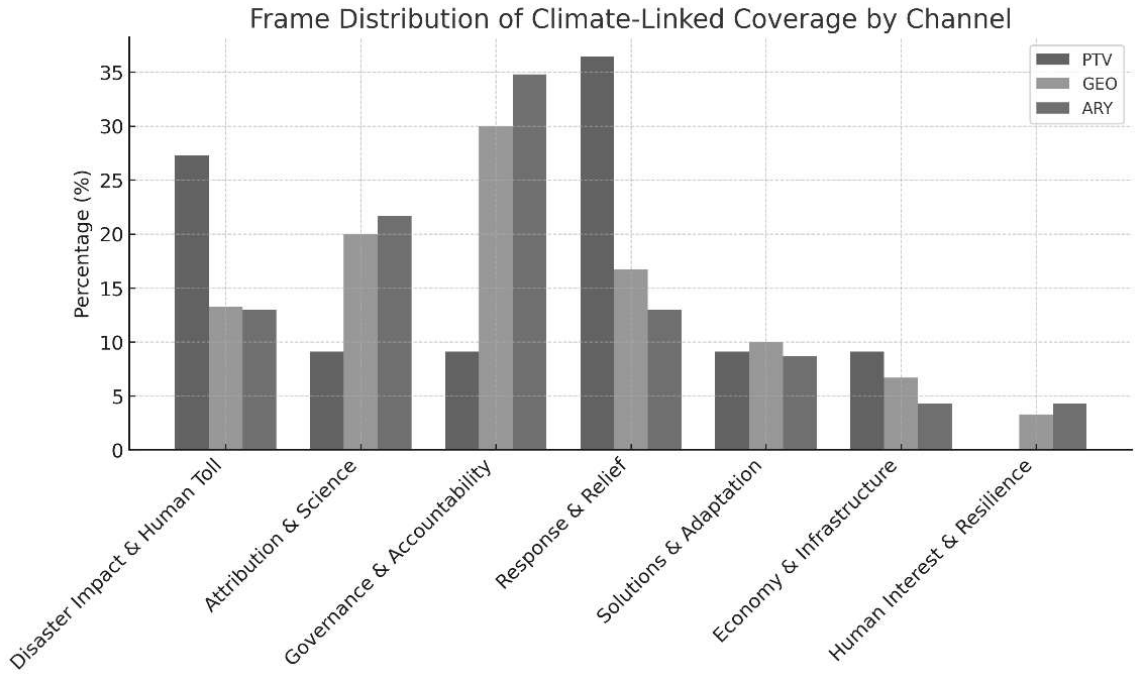

Figure 7.1 Frame Distribution of Climate Linked Coverage by Channel

With PTV emphasizing Response and Relief (36.4%) and GEO (30.0%) and ARY (34.8%) giving precedence to Governance and Accountability, the frame distribution of climate-related items varied descriptively across channels. The chi-square test, however, showed that these differences were not statistically significant ($\chi^2(12, N = 64) = 6.71$, $p = .876$). A small-to-moderate correlation between channel ownership and frame selection is indicated by the effect size, Cramer's $V = .23$. This implies that while there are descriptive differences, they are not significant enough to show a consistent pattern among the three channels.

Table 7.2

Frame Distribution of Climate-Linked Coverage by Channel

Frame Type	PTV (n = 11)	GEO (n = 30)	ARY (n = 23)
Disaster Impact & Human Toll	3 (27.3%)	4 (13.3%)	3 (13.0%)
Attribution & Science	1 (9.1%)	6 (20.0%)	5 (21.7%)
Governance & Accountability	1 (9.1%)	9 (30.0%)	8 (34.8%)

Response & Relief	4 (36.4%)	5 (16.7%)	3 (13.0%)
Solutions & Adaptation	1 (9.1%)	3 (10.0%)	2 (8.7%)
Economy & Infrastructure	1 (9.1%)	2 (6.7%)	1 (4.3%)
Human Interest & Resilience	0 (0%)	1 (3.3%)	1 (4.3%)

Note. $\chi^2(12, N = 64) = 6.71$, $p = .876$, Cramer's V = .23, indicating a small-to-moderate association between channel and frame choice.

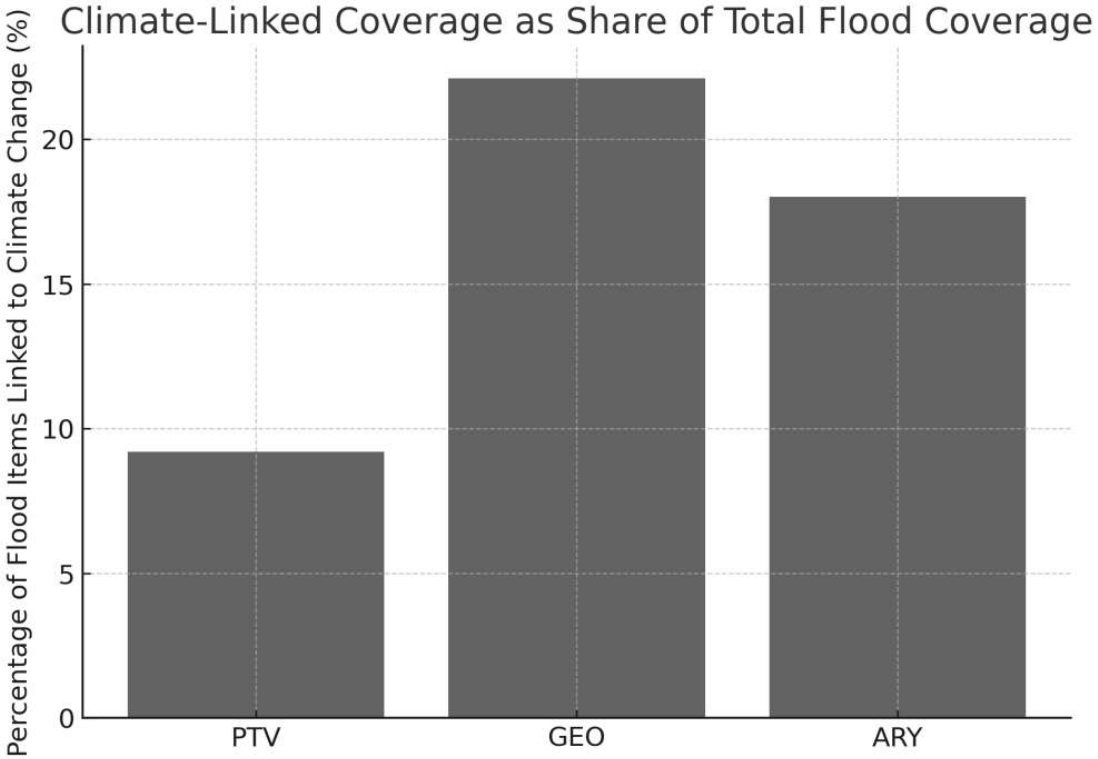

Figure 7.2 Climate Linked Coverage as Share of Total Flood Coverage

Interesting descriptive contrasts were also revealed by tone differences, with PTV taking a more positive view of government actions (45.5%) whereas GEO (43.3%) and ARY (43.5%) tended to be more critical. Nevertheless, $\chi^2(4, N = 64) = 2.51$, $p = .642$, the chi-square test once more revealed no statistically significant association. There is very little correlation between tone and channel ownership, as indicated by the effect size, Cramer's V =.14. This

suggests that tone variations are not a consistent pattern across channels, even though they are apparent in percentages.

These results show a descriptive tendency in which the public broadcaster appeared more positive about state institutions during the floods, while the private broadcasters appeared more critical in their framing. However, because the tone differences were not statistically significant, this pattern should be interpreted cautiously as a descriptive tendency rather than a confirmed channel-level difference.

Table 7.3

Tone of Climate-Linked Items by Channel

Tone	PTV (n = 11)	GEO (n = 30)	ARY (n = 23)
Positive	5 (45.5%)	7 (23.3%)	5 (21.7%)
Negative	3 (27.3%)	13 (43.3%)	10 (43.5%)
Neutral	3 (27.3%)	10 (33.3%)	8 (34.8%)

Note. $\chi^2(4, N = 64) = 2.51$, $p = .642$, Cramer's $V = .14$, indicating a small association between channel and tone.

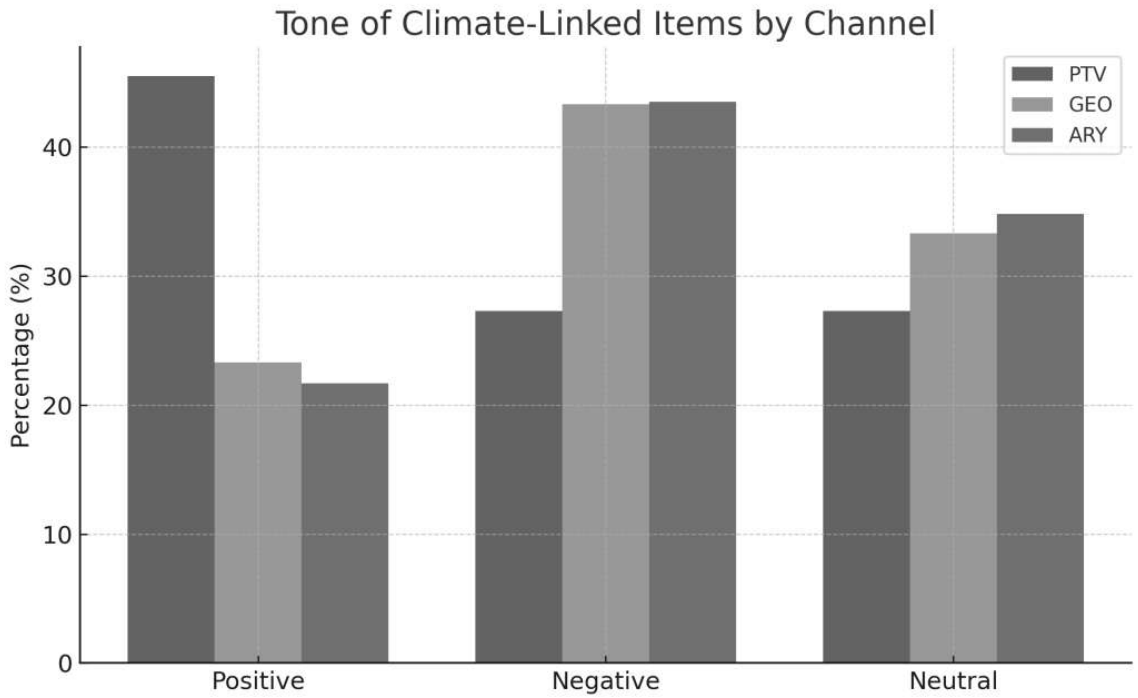

Figure 7.3 Tone of Climate Linked Items by Channel

Overall, only a small portion of all flood reports across the three channels were climate-linked (Table 4.1). GEO and ARY contributed larger shares (22.1% and 18.0%, respectively), while PTV contributed the smallest percentage (9.2%). These variations in relative emphasis among ownership types are depicted in Figure 7.1.

Channel differences were not statistically significant (χ^2, $p = .876$), though descriptive contrasts suggest differences in emphasis across channels (Table 7.2, Figure 7.2). Response and Relief accounted for a large portion of PTV coverage (36.4%), Governance and Accountability was emphasized by GEO (30.0%), and Governance and Accountability was given top priority by ARY (34.8%). On private channels, attribution and science frames were more common than on PTV.

Ownership patterns showed descriptive contrasts in tone distributions (Table 7.3, Figure 7.3). While GEO and ARY tended toward more negative tones, PTV had more positive assessments of the government and relief efforts (45.5%). About one-third of items on GEO and ARY had neutral coverage, whereas 27.3% of items on PTV did the same.

Taken together, these findings do not statistically confirm differences among the three channels, but they do show meaningful descriptive contrasts in the scope and presentation of flood coverage associated with climate change.

8. Discussion

The results should be interpreted with caution. They demonstrate descriptive contrasts in the dissemination of information about climate-related disasters, but the chi-square tests did not establish statistically significant differences among the three channels in relation to frame or tone. According to framing theory (Entman, 1993; Nisbet, 2009), PTV's focus on official response and relief points to a definition of the problem and a causal attribution that prioritizes state action over structural or scientific factors. On the other hand, GEO and ARY gave relatively more attention to scientific attribution and governance shortcomings, which encouraged a more critical assessment of institutional accountability and readiness.

These descriptive differences are aligned with prior research indicating private broadcasters as having more critical/accountability-seeking perspectives than public ones which often align with the dominant narrative (McNair, 2018; Schfer & O'Neill, 2017). It is important to note, however, that the present study does not conclude statistically significant findings on the differences; it merely suggests that the descriptive evidence points in a theoretically interesting direction and warrants future research with a larger sample.

Though the focus on Response and Relief frames for PTV could assuage concerns from audiences, it fails to draw sufficient attention to the needs for adaptation and long-term changes; though the focus on science and governance in the private outlets can alert the public to system-level factors, it is largely framed around government failure and blame.

Thus the theoretical contribution of the study is toward understanding framing theory, specifically framing in relation to the absence of climate and episode framing on Pakistani television news bulletins. The findings make clear that sensitization towards climate change does not occur when floods are simply reported, and when disaster footage is televised, it is done with the use of thematized framing, such as links to climate attribution, responsibility, and adaptation and resilience. It is in this way that the minimal prevalence of attribution and adaptation framing shows a gap between disaster news and climate risk communication.

The study is limited because it focused only on peak-time bulletin news and only three Pakistani television news channels. While limiting the sample scope was necessary for a close analysis of news framing, the exclusion of news bulletins across Pakistani television may have prevented the research from capturing the entirety of the climate conversation among the media landscape. Given the minimal presence of climate-linked items, small sample size and absence of statistically significant results, larger samples may have provided higher statistical power and illustrated otherwise invisible percentage differences in proportions of framing in the study. Future research may conduct audience reception studies to analyze how audiences understand frames, and conduct media analyses of the impact of the online platform, as

well as regional language television. In addition, analyses of future climatic events may offer perspective on event-specific vs. Systemic framing patterns across television channels.

Overall, the study contributes to climate communication research in Pakistan by revealing the problem is not simply public vs. Private channel dynamics, but rather limited climate change framing in disaster news bulletins, and editorial choices in relation to such frames may require careful balancing of immediate victim and perpetrator discourses toward a richer framing of risk for effective climate communication.

9. Conclusion

Collectively, these findings provide suggestive evidence that ownership forms may affect the volume of, as well as source, frame and tone of climate related reporting, but they are not statistically significant within the current sample. The stronger claim here is that climate change remained an issue missing from coverage of floods, relative to the sheer scale of the 2022 disaster and Pakistan's long-term vulnerability to climate change. What is more critically, this exclusion matters, because news bulletins on television news either frame disasters as linked to structural climate risks or they frame disasters as discrete events of victimhood, aid and official response.

10. Practical Implications

This research highlights the importance of the need for careful framing by policymakers and reporters. Reporters who move beyond a disaster-recovery narrative to one that discusses attributing responsibility and creating systemic change can frame their stories to ready the public for understanding climate change and seeking systemic solutions.

As a result of the influence of media stories in shaping public perceptions, the government can take action to support public deliberation and knowledge-sharing between the scientific community and the media, while consistently reinforcing both short-term recovery efforts and the need for the long-term planning of resilience measures. Joint training programs could

increase the accuracy and impact of reporting, as well as public education levels among the press, climate scientists, and emergency managers.

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